

Renewable Energy:

New Jersey's Green Power Purchasing Program

As a testament to its commitment to promoting renewable energy generation, improving air quality, and reducing greenhouse gases, the state of New Jersey has emerged as the number one purchaser of green power (as a percentage of total load) among all state governments in the country. In fact, the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE) has twice honored the state with their Green Power Leadership Award. Not only did purchasing green power save the state money, it also reduced carbon dioxide emissions—equivalent to removing 32,490 cars from the road for 1 year.

(call-out)

New Jersey's green power purchases are equivalent to removing 32,490 cars from the road for 1 year, in terms of carbon dioxide reductions.

The Nuts and Bolts

In 1999, in coordination with New Jersey Transit, the New Jersey Department of the Treasury developed a proposal to lower the state's energy costs by (1) aggregating the power purchases of 178 independent public agencies,¹ and (2) negotiating lower costs for this aggregated consumption through competitive bidding in the state's recently deregulated market and through economies of scale. At the same time, New Jersey Governor McGreevey's office delivered a mandate for a minimum of 10 percent green power purchases for all state agencies, with a commitment to allocate funds to cover the premium cost of green power. In fact, the New Jersey State Senate introduced legislation to allocate \$3.5 million from New Jersey's share of the Federal Petroleum Overcharge Reimbursement Fund (PORF) for paying green power premium charges or to allow the use of state funds if PORF funds are not available.

Implementing the Program (side bar)

To assist the green power purchasing program, the state of New Jersey formed the New Jersey Consolidated Energy Savings Program (NJCESP) to oversee and coordinate consolidated power purchases.

The NJCESP's steering committee is composed of representatives of member organizations (the state of New Jersey; the state's departments and agencies; state colleges, authorities, commissions; and other independent state entities) and provides guidance for the program. The NJCESP's operating committee makes the purchases and runs the program, in conjunction with a program manager from the Department of the Treasury.

The result: a plan to purchase nearly 500 million kilowatt-hour (kWh) of green power over 52 months, or about 12 percent of the overall electricity requirements for the applicable facilities. The New Jersey Department of the Treasury awarded power supply contracts based on a firm fixed price per kWh for the term of each contract. Three contracts were awarded:

- The first contract was signed with Conectiv Energy in November 2000. Conectiv supplied 152 million kWh of green energy from clean technologies, including at least 50

¹ Agencies include the New Jersey Highway Authority, New Jersey Transit, the Palisades Interstate Park Commission, the New Jersey Turnpike Authority, and Rutgers University, as well as Stockton, Patterson, and Montclair State Colleges.

percent from small-scale hydropower, through April 2002. The premium cost of this green power to the state was an additional \$0.0133 per kWh. During this particular contract period, however, standard supply rates surpassed the green power rate, resulting in a \$200,000 savings for New Jersey over the life of the contract.

- In the second contract, Green Mountain Energy Company (GMECo) provided renewable power at a lower rate than had been negotiated in the Conectiv contract. Under this contract, GMECo provided 131 million kWh of green power from 100 percent renewable sources, comprised of a mix of wind and small-scale hydropower generation at a premium of approximately \$0.0111 per kWh.
- The third contract was awarded to Pepco Energy Services, which will supply 197.6 million kWh of wind-generated power from July 2003 through March 2006. Under this contract, the state will pay a green premium of approximately \$0.00883 per kWh. Pepco recently announced that it would source much of its green power from wind farms located throughout the Mid-Atlantic region.²
- New Jersey's is currently purchasing *Green-e* certified power,³ which is composed of a minimum of 50 percent renewable energy sources. The New Jersey Board of Public Utilities is in the process of developing its own guidelines, which it will use to certify future purchases. New Jersey also has recently strengthened its Renewable Portfolio Standard, requiring that, by 2008, 4 percent of electricity generation must come from renewable sources, and by 2020, 20 percent must come from certified renewable sources in service after 1996. All suppliers providing goods or services to the state have been working towards achieving this mandate.

Deregulation and Green Power Purchases (side bar)

New Jersey's deregulated electricity market was an important factor in the development of the green power purchasing program, as it allowed for a fair selection of bids from bona fide suppliers* and enabled the benefits associated with the state's green power purchases to be realized within the PJM power pool, of which New Jersey is a part. States with regulated utilities may not be able to negotiate in a competitive market in this manner, but can still benefit from other green purchasing options, including purchasing green certificates, or tags.**

*See the National Renewable Energy Laboratory's report on the influence of customer aggregation in green power purchases at:
<http://www.eere.energy.gov/greenpower/lb29408.pdf>.

** Green certifications and green certification marketing programs:
<http://www.eere.energy.gov/greenpower/certificates.shtml>.

Environmental Benefits

The environmental benefits reaped by New Jersey's green power purchasing program are evident not only in the reductions in air emissions, but also in meeting regulatory requirements. Benefits include:

² U.S. Newswire, *Pepco Energy Services Signs Largest Retail Wind-Power Contract in Mid-Atlantic Region; Renewable Energy to Power Rutgers University, Other State Entities* (July 23, 2003): <http://www.powermarketers.com>.

³ *Green-e* certified products: <http://www.green-e.org>.

- Preventing an estimated 168,948 metric tons of CO₂ emissions, which has helped the state achieve its goal⁴ of reducing its greenhouse gas emissions to 3.5 percent below 1990 levels by 2005.⁵
- Avoiding 417 tons of nitrogen oxides (NO_x) emissions and 348 tons sulfur dioxide (SO₂) emissions, which will help the state come closer to complying with federal Clean Air Act requirements. The benefits realized under each contract are summarized in Table 1.

Table 1. Avoided Emissions from New Jersey's Aggregated Green Power Purchase Contracts ⁶				
Contract Period	November 2000 - April 2002 (extended)	April 2002 - June 2003	July 2003 - March 2006*	Total
Green Supplier	Conectiv Energy	Green Mountain Energy Company	Pepco Energy Services	
Source	50% mix (small-scale hydro and landfill gas)**	100% mix (wind or hydro)**	100% mix (50% wind)**	
Purchased kWh (millions)	152	131	188	471
CO ₂ avoided (metric tons)	42,035	72,348	54,565	168,948
SO ₂ avoided (metric tons)	86	149	113	348
NO _x avoided (metric tons)	104	179	134	417
Equivalent number of cars†	8,084	13,913	10,493	32,490

* Projected estimates for the duration of the contract.

** *Green-e certified*.

† Equivalent number of passenger cars taken off the road in 1 year, based on an estimated average 12,500 miles traveled per year, releasing an estimated 11,450 pounds of CO₂ per year. From Average Annual Emissions and Fuel Consumption for Passenger Cars and Light Trucks. EPA Office for Transportation and Air Quality. Available at: <http://www.epa.gov/otaq/consumer/f00013.htm>.

⁴ New Jersey Department of Environmental Protection, *New Jersey Sustainability Greenhouse Gas Action Plan*: <http://www.state.nj.us/dep/dsr/gcc/ghg-what-is.htm>.

⁵ The cumulative CO₂ emissions through the purchases will actually bring New Jersey closer to a 4.4 percent reduction relative to 1990 levels.

⁶ Figures provided by New Jersey Department of Treasury, September 29, 2003.

By showing leadership in the area of green power purchasing and being formally recognized by EPA and DOE for its commitment to green power, New Jersey has, in turn, sparked additional environmental achievements throughout the state, such as:

- An increase of green power purchases by the private sector.
- An increase in statewide renewable energy and energy efficiency programs, including demand side management projects, performance contracting, and new clean energy programs from the New Jersey Board of Public Utilities.
- Growing efforts to meet the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ in newly constructed state office buildings.⁷

Economic Benefits

Implementing an aggregated green power purchasing program has not only been positive for the environment, but it has generated economic benefits as well, including the following:

- Due to an unexpected increase in natural gas prices, Conectiv's standard prices were raised above the *Green-e* premium rate during the first contract period. This allowed the state to actually save an estimated \$200,000 by purchasing green power.
- Establishing a system to consolidate the electricity purchases of a number of independent state and public agency facilities gave the Treasury Department greater bargaining power to renegotiate one of its green power contracts, yielding a \$100,000 savings.
- Using one aggregated contract to represent multiple public sector partners, rather than numerous separate contracts, provided economies of scale cost savings to each agency. The arrangement has also allowed the state to be able to share technical knowledge more broadly, thereby reduce consulting costs.
- An aggregated system also has helped streamline the contract development process and reduce administrative burdens on the Treasury Department and other state agencies, particularly after gaining some initial experience with this new contracting approach.
- The increased publicity about New Jersey's green power has led to the further expansion of green energy markets in the state. Likewise, because some percentage of green power purchases from Conectiv, GMECo, and Pepco Energy Services were guaranteed to come from new capacity, this program has contributed to bringing new green generators into the marketplace.

⁷ U.S. Green Building Council's LEED system: <http://www.usgbc.org/LEED>.

- Making use of the successes and lessons learned from its aggregated green power purchasing contracts, New Jersey recently aggregated the power purchases of a number of other state agencies to purchase conventional power at lower costs for some of the state's largest facilities.

Additional Resources

Additional resources on green power purchasing in New Jersey and elsewhere include:

- New Jersey Department of Environmental Protection: <http://www.state.nj.us/dep/>.
- U.S. Department of Energy's Green Power Network: <http://www.eere.energy.gov>.
- "Aggregated Purchasing - A Clean Energy Strategy" from *Solar Today* magazine. Discusses the principles behind aggregated power purchasing, and how it can be used to facilitate green power purchases. http://www.eere.energy.gov/greenpower/pdf/Aggregated_Purchasing.pdf
- National Renewable Energy Laboratory, *Customer Aggregation: An Opportunity for Green Power?* (February 2001): <http://www.eere.energy.gov/greenpower/lb29408.pdf>.

Key Players

Leading actors in the state's Aggregated Green Power Purchasing Program include:

- The **New Jersey Department of the Treasury**, responsible for leading the state's green power purchasing consolidation and aggregation efforts.
- **New Jersey Transit**, the **New Jersey Department of Environmental Protection**, and **New Jersey Board of Public Utilities**, providing additional support and coordination.
- The **Governor's Office**, providing a firm and continuing commitment to green power purchases for the state.

Contact Information

For more information on green power purchasing in New Jersey, contact:

Joe Carpenter

Office of Innovative Technology and Market Development
New Jersey Department of Environmental Protection
Phone: 609 984-5418
Fax: 609 292-7340
Email: joseph.carpenter@dep.state.nj.us

Dave Gillespie

Sr. Energy Analyst
New Jersey Transit
Phone: 973 491-8522
Fax: 973 491-7968
Email: dgillespie@njtransit.com

Rodney Richards

Project Manager
New Jersey Treasury Administration

Program Manager
New Jersey Consolidated Energy Savings Program
Phone: 609 633-9049
Fax: 609 633 9090
Email: rodney.richards@treas.state.nj.us

Nicholas Mahrt
Pepco Energy Services
Media Relations
Phone: 202 466-7391

Who Else Is Purchasing Green Power? (big side bar at end)

The number of state and local governments involved in green power purchasing has been growing steadily. Other states currently purchasing green power include: California, Illinois, Maryland, New York, Pennsylvania, Rhode Island, and Tennessee. The growing number of cities purchasing significant levels of green power includes: Chicago, Chula Vista (CA), Los Angeles, Moab (UT), Myrtle Beach (SC), Oakland, Radnor Township (PA), Salt Lake City, Santa Barbara, Santa Monica, Seattle, and Westport (CT).

Notable initiatives include the following:

- In 1999, the **Commonwealth of Pennsylvania** became the first state to purchase green energy on behalf of state agencies. Today approximately 5 percent of Pennsylvania's energy load is now met with green energy, amounting to more than 50 million kWh per year. In May 2003, Acting Secretary of the Pennsylvania Department of Environmental Protection Katy McGinty announced plans to increase the amount of renewable energy it purchases to 10 percent of total state government electricity use.*
- The **city of Chicago** currently purchases 10 percent of its aggregated power needs from renewable sources provided by ComEd, and will require that 20 percent, or about 80 MW, of its power come from wind, solar, small hydroelectric, and landfill gas starting in 2006. All profits from the city's green power purchases will be placed in a reinvestment fund that will be used for developing new renewable generation capacity in the Chicago area, in collaboration with the Environmental Resources Trust, a non-profit organization based in Washington, DC.
- The Cape Light Compact, formed in 1997, allows municipalities in **Cape Cod and Martha's Vineyard, Massachusetts**, to lower their electricity costs through aggregated purchasing. These local governments have recently offered a green power purchase option to all electricity consumers within their municipalities that elect to aggregate their power purchases. Consumers can choose a 50 percent renewable mix, a 100 percent renewable mix, and an option in which \$0.01 per purchased kWh is dedicated to new green power capacity. For more information, visit: <http://www.capelightcompact.org/>.
- In October 2002, the **state of Maryland's** Department of General Services (DGS) announced that it would increase the state government's green power purchases from 6 percent to 20 percent, at least 10 percent of which must be generated from wind or solar sources. State facilities that will receive green power through this new plan include Salisbury University, the University of Maryland – Eastern Shore, and the Eastern Correctional Institute.**

**Green Power Network, PA to Double Green Power Purchases:
http://www.eere.energy.gov/greenpower/0503_padep.shtml.*

*** Maryland DGS, State Buying More Green Power: <http://www.dgs.state.md.us>.*